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10/550,007

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Antonio Lopez Munoz

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EXAMINER

NGUYEN, VU ANH

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,007	<b>Applicant(s)</b> LOPEZ MUNOZ, ANTONIO	
	<b>Examiner</b> Vu Anh Nguyen	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/23/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group II, Claims 6-10, in the reply filed on 04/07/2011 is acknowledged. The traversal is on the ground(s) that the two groups of invention are "sufficiently related that a thorough search for the subject matter of each of the designated inventions would encompass a search for the subject matter of the remaining designated inventions" without serious burden. This is not found persuasive because the ink of group II can be prepared by a method unrelated to the method of group I. A search for the ink of group II will be focused on the ink composition itself, not on the method of producing the ink, i.e., a search for one group does not encompass a search for the other group (not to mention that the method recited in claim 6 is not the same as the method recited in claim 1). The requirement is still deemed proper and is therefore made FINAL. Claims 1-5 are withdrawn from further consideration as directed to a non-elected invention.

2. The elected claim 6 should have been rewritten into independent form. Please do so in the reply to this communication.

### ***Priority***

3. This application is a national stage entry of PCT/ES04/00111 and claims priority to application P200300676 filed in Spain. Certified copy of the priority document has been made of record.

***Specification***

3. The disclosure is objected to because of the following informalities: The specification, due perhaps to translation, contains a number of issues. Specifically, the term "polyol acrylate" in line 3 of page 3 and the term "ethoxylated" in line 14 of the same page are mis-spelled. The meaning of the phrase "those that are bifunctional and trifunctional must be differentiated" in line 10 of page 3 is not clear. Also, the chemical names, such as hexanedioldiacrylate and tripropyleneglycoldiacrylate, should not be capitalized. Appropriate correction is required.

***Claim Objections***

4. Claims 6-10 are objected to because of the following informalities: First, the chemical names should not be capitalized. Second, the phrase "dispersing pigments in an organic medium dispersed in a mixture of oligomers..." in claim 6 should be re-written since it is unconventional and misleading to say that an organic medium is dispersed in a mixture of oligomers and monomers. Third, the term "ethoxylated" in claim 10 is mis-spelled. Fourth, a comma or a semicolon should be inserted between filter and characterized in line 8 of claim 6. Fifth, the phrase "having bifunctional and trifunctional multifunctional" in the last line of claim 6 is grammatically awkward and should be revised. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 6 recites an amount of isobornyl acrylate of 10-24%. This figure does not have support in the original disclosure which provides 10-25% of monofunctional acrylic monomers but no mention is made of isobornyl acrylate. The originally filed claims have monofunctional acrylate in an amount of 10-25%, not 10-24%.

8. Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 6 has a number of issues. First, it is not clear as to what is having "a maximum particle size of 1 micron" - the pigment or the polyol acrylates. Second, the phrase "mixture of oligomers and monomers and polyol acrylate" is unclear for two reasons: (1) it implies that the polyol acrylate is not a monomer and (2) the term polyol acrylate is not defined anywhere in the disclosure. Third, it is unclear what is being referred by "it" in the "diluting it" in line 4. Fourth, the viscosity is ambiguous as the temperature at which it is measured is not specified. Fifth, the phrase starting with "with

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a photoinitiator” and ending with “one filter” in lines 6 and 7 does not say what to do with the photoinitiator. Sixth, “the start of polymerization of the oligomers and monomers from the first step” has three issues: (1) “the start of polymerization” lacks an antecedent basis, (2) the oligomers in line 3 are not mentioned as being polymerizable, and (3) what step is being named “the first step”? Seventh, what does it mean to say “subjecting the resulting ink to at least one filter, finalizing with a 1 micron filter?” The phrase, as it is, does not necessarily mean that the ink is being filtered. Eighth, the phrase “having isobornyl acrylate among the multifunctional acrylic monomer” is confusing since isobornyl acrylate is monofunctional, not multifunctional. Ninth, the recited ratios of “10% to 24%” and “50% to 90%” are ambiguous for at least two reasons: (1) it is unclear whether they are mole%, weight%, vol% or else, and (2) it is not made clear what the percents are relative to. Tenth, is the ratio “10% to 24%” referred to the isobornyl acrylate or the multifunctional acrylic monomer? Finally, if claim 6 is intended for the product obtained by method of claim 1, then the claim should be changed to “A digital printing ink obtained by the method of claim 1.” As it stands, it is unclear whether the claimed ink is that obtained from the method of claim 1 or from the method being recited in this claim. Note that the process recited in this claim is different from the method of claim 1. For example, the figure of “between 10% and 25%” is missing and the ratio “50% to 90%” in claim 6 is more ambiguous than that in claim 1.

10. *In the followings, the composition of the ink of claim 6 is assumed to comprise pigments, polymerizable oligomers, polyol acrylate, monomers and a photoinitiator*

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*system; wherein the monomers comprise 10-24 wt% of monofunctional acrylic monomers and 50-90 wt% of bifunctional and multifunctional acrylic monomers, based on the total acrylic monomers; wherein the monofunctional acrylic monomers comprise isobornyl acrylate; wherein the ink has a viscosity of 10-30 centipoises; and wherein the ink is substantially free of particulate materials having a particle size of 1 micron or more.*

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0149130 to Kondo.

13. Corresponding to the ink being claimed in claim 6, Kondo teaches an inkjet ink composition comprising a white pigment, a polymerizable compound and an initiator, wherein the ink has a viscosity of 10-500 centipoises at 30°C (abstract). As inkjet printing [0086] is a digital printing process, the prior art ink is a digital printing ink. The viscosity of the ink at 70°C is 7-30 centipoises (see claim 11). In one particular example (Ink #5 on page 9), the ink comprises a white pigment having a pre-dispersion diameter of 0.15 micron [0116], a photoinitiator and a mixture of acrylic monomers comprised of about 24 wt% of monofunctional acrylic monomers, including isobornyl acrylate (and

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ethoxydiethylene glycol acrylate, a polyol acrylate), 43 wt% of tetraethylene glycol diacrylate (which is both a polymerizable oligomer and a bifunctional acrylic monomer), and 22 wt% of glycerin propoxytriacylate (which is a trifunctional acrylic monomer; wherein all the weight percents are based on the total weight of the acrylic monomers. The ink is filtered using a 2-micron filter [0119].

14. It is clear that, process of making aside, the prior art ink has all the features of the claimed ink except Kondo fails to disclose whether the ink has particulate material with a maximum diameter of 1 micron or more. Nevertheless, considering that the pigment has a very small pre-dispersion diameter of 0.15 micron and since Kondo teaches that the after-dispersion pigment is preferred to have an average diameter of 0.1-1 micron and that the preferred maximum particle diameter is 0.3-3 micron in order to avoid clogging of the inkjet nozzles and to maintain good storage stability of the ink as well as ink recovering properties and curing sensitivity [0031], it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to have optimized the prior art ink by controlling the maximum particle size to within the preferred range of 0.1-1 micron so as to avoid clogging of the inkjet nozzles and to maintain good storage stability of the ink as well as ink recovering properties and curing sensitivity. MPEP 2144.05 (I & II).

Although the prior art ink is not produced by the same process as recited in claim 6, it is noted that “[even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in

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the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process, the prior art ink composition meets the requirements of the claimed composition.

15. As to the hexanediol diacrylate recited in claim 7, the prior art bifunctional monomer does include 1,6-hexanediol diacrylate [0039].

16. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo as applied to claim 6 above, and further in view of WO03/054091 to Bergiers et al. (Bergiers hereafter).

17. Although Kondo discloses diethylene glycol diacrylate and triethylene glycol diacrylate among the bifunctional acrylic monomers, and trimethylolpropane triacrylate among the trifunctional acrylic monomers [0039], it fails to teach dipropylene glycol diacrylate and tripropylene glycol diacrylate and ethoxylated trimethylolpropane triacrylate.

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18. In the same field of radiation-curable pigmented inkjet ink as Kondo, Bergiers discloses a curable ink comprising tricyclodecyl di- or mono-(meth)acrylate, a pigment, a photoinitiator and acrylic/methacrylic monomers (p. 4). On the acrylic /methacrylic monomers (i.e., the diluents), Bergiers teaches that they are "those currently used in radiation curable compositions, especially in the ink field". These can be chosen among mono- di- and tri-acrylates like **isobornyl acrylate**, phenoxyethyl acrylate, tetrahydrofurfuryl acrylate, **dipropyleneglycol diacrylate**, **tripropyleneglycol diacrylate**, **hexanediol diacrylate**, trimethylolpropane triacrylate or alkoxyated acrylates like propoxylated neopentylglycol diacrylate, **oxyethylated trimethylolpropane triacrylate...**" (p. 6, emphasis added).

19. From the teachings of Kondo and Bergiers, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to have modified the ink taught by Kondo by employing, as the bifunctional acrylic monomers, not only the ethylene glycol versions taught by Kondo but also the propylene glycol versions taught by Bergiers and; as the trifunctional acrylic monomer, not only the trimethylolpropane triacrylate taught by Kondo but also the ethoxylated version taught by Bergiers because all these alternatives are functionally equivalent and can be used interchangeably. Such modification, in view of Bergiers, is not expected to effect in any critical impact to the resulting ink. "In *United States v. Adams*, . . . [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." MPEP 2141 (I).

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Anh Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 1762

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